

ABSTRACT OF THE DISCLOSURE

A method with related structures and computational components and modules for modeling data, particularly audio and video signals. The modeling method can be applied to different solutions such as 2-dimensional image/video compression, 3-dimensional image/video
5 compression, 2-dimensional image/video understanding, knowledge discovery and mining, 3-dimensional image/video understanding, knowledge discovery and mining, pattern recognition, object meshing/tessellation, audio compression, audio understanding, etc. Data representing audio or video signals is subject to filtration and modeling by a first filter that tessellates data having a lower dynamic range. A second filter then further tessellates, if needed, and analyzes
10 and models the remaining parts of data, not analyzable by first filter, having a higher dynamic range. A third filter collects in a generally lossless manner the overhead or residual data not modeled by the first and second filters. A variety of techniques including computational geometry, artificial intelligence, machine learning and data mining may be used to better achieve modeling in the first and second filters.

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